





(3)

Barham, Sons. Ltd

yard no. 301-2-3-4

Profile.

SUNDERLAND RPT. NO. 34 144

Empire Maurilius.

SUNDERLAND RPT. NO. 34207

"Empire Ocean"

SUNDERLAND RPT. NO. 34323.

Empire Tobago.

MADDA BOZZO \*

EX

'GRYFEVALE' ~~XXXX~~

M/N KRIS S

015213-015223-0208



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S.S. NO 301.  
 P.F. (C) TYPE VESSEL.  
 PROFILE.

SCALE: 1/8" = 1 FOOT

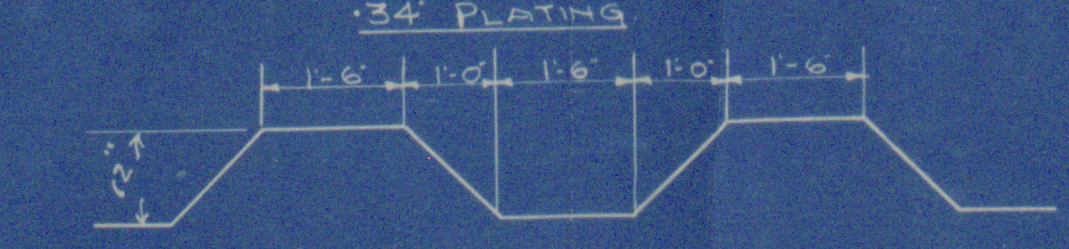
CLASS 100A1 WITH FREEBOARD CORRESPONDING  
 TO DRAUGHT EXTREME 26'-9"

DIMENSIONS

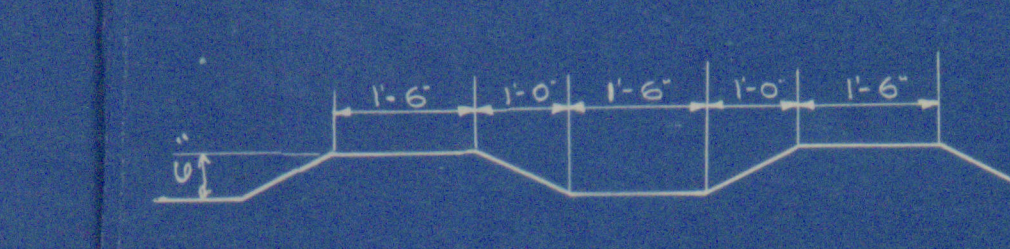
LENGTH B.P. ON LWL	125'-0"
BREADTH MOULDED	56'-0"
BREADTH EXTREME	56'-3"
DEPTH MOULDED 2ND DECK (FLAT SHEER)	27'-3"
DEPTH MOULDED UPPER DECK ( " )	38'-0"

THE SCANTLINGS OF BULB ANGLE & CHANNEL SECTIONS  
 GIVEN ON THIS PLAN ARE N.B.S.

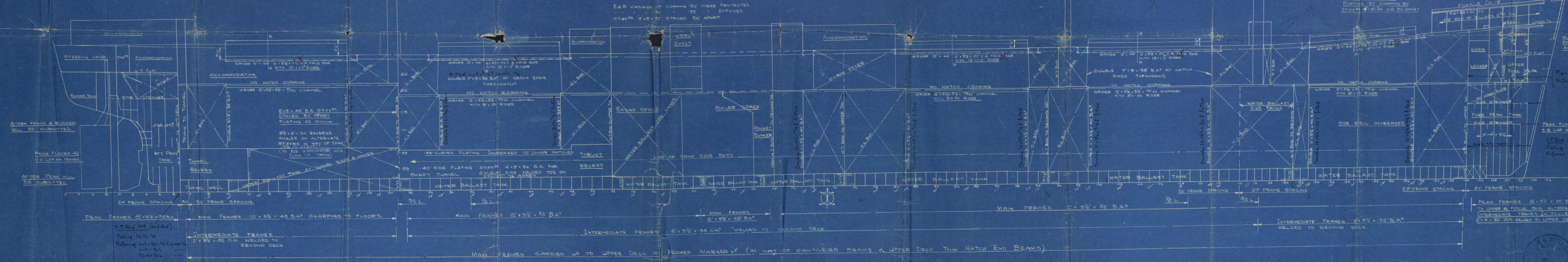
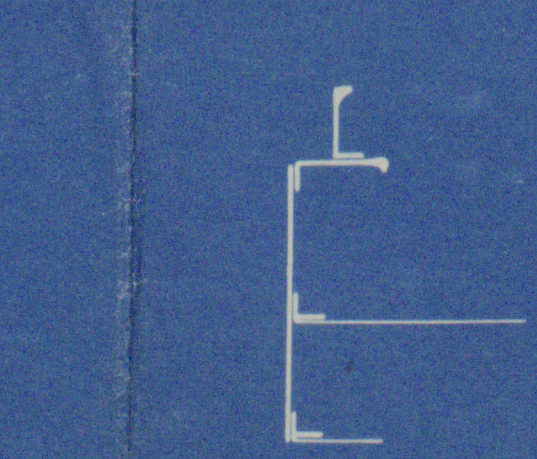
DETAIL SHOWING TROUGHED PLATES  
 FOR TRANSVERSE WT BULKHEADS ON  
 FRG 58, 75, 96 & 118 IN TWEEN DECK  
 FR 68 IN HOLDS



DETAIL SHOWING TROUGHED PLATES  
 FOR TRANSVERSE WT BULKHEADS ON  
 FRG 58, 75, 96 & 118 IN TWEEN DECK  
 FR 68 IN HOLDS



SECTION A-A  
 TWIN UPPER DECK  
 HATCH SIDE



ALTERNATELY - PLATES  
 FORMED OF 3/8" x 3/8" x 3/8"  
 ANGLES LUGGED

PEAK FLOORS 42"  
 5/8" LAP ON FRAMES  
 E.P. Bldg (Fitted) Frame 110  
 Plating 55'-0"  
 Stiffeners 4x3x1/2 spaced 24"  
 4x3x1/2 spaced 24"





(2)

Bartram, Sons, Ltd.

Yara no. 301-2-3-4

Midship Section.

SUNDERLAND RPT. NO. 34144

"Empire Mauritius"

SUNDERLAND RPT. NO. 34207

"Empire Aden".

SUNDERLAND RPT. NO. 34323.

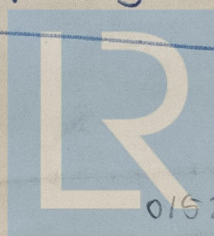
Empire Tobago.

<sup>EX</sup>  
Gowborough Hill

NOW

GRYFFVARK ~~X~~

N/N KRIS



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SHIP No ~~301~~ 303  
P.F. (C) TYPE VESSEL.  
MIDSHIP SECTION.

SCALE  $\frac{1}{2}'' = 1 \text{ FOOT}$

CLASS 100 AI WITH FREEBOARD CORRESPONDING TO DRAUGHT EXTREME 26'-9"

### DIMENSIONS.

LENGTH B. P. ON L.W.L.	425'-0"
BREADTH MOULDED	56'-0"
" EXTREME	56'-3"
DEPTH MOULDED 2ND DECK (FLAT SHEER)	27'-3"
" " UPPER " ( " " )	38'-0"

## NUMERALS.

1st. LONGTH NUMBER  $L \times D = 425.0' \times 37' = 15,725$   
 2nd. " "  $L(B+D) = 425(56.0+37) = 39,525.$   
 1/2 TO UPPER DECK  $= 425.0 \div 38.0 = 11.18$   
 D (MOULDED DEPTH)  $= 37$   
 $d = 38' - (10.9' + 3.7\frac{1}{4}') - \text{CREDIT FOR PEEPER KNEES \& FRAMING BULT.} = 21.83'$

EQUIPMENT NUMBER. (NORMAL SHEER)

2ND LONGTH NUMBER  $L(8+D) = 425(56+37) = 39,525$   
FORECASTLE  $38.0 \times 6.75 \times .75 = 192$   
MIDSHIP DECKHOUSE  $96 \times 7.5 \times .50 = 360$   
RAISED UPPER DECK AFT  $34 \times 3 \times .75 = 77$   
EQUIPMENT NUMBER: 40.154

EQUIPMENT

2 BOWER ANCHORS	68 CWTs	EACH	DOCKLESS
1 STREAM "	19 "	EX	STOCK
225 FATHOMS	2 5/8	STUD CHAIN	CABLE 600 CWTs
90 "	1 3/8	STUD CHAIN OR	5" FLEXIBLE WIRE 6x12
120 "	4 3/4	SPECIAL FLEXIBLE	STEEL WIRE 6x24
2 HAWSEYES	90 FATHOMS	8" HEMP OR	2 1/2" FLEXIBLE STEEL WIRE 6x12
2 WARPS	90 "	7" "	2 1/2" "

## RIVETING.

RIVETS IN FRAMES TO FLOOR AND CROSS THE PLATES IN AFTER PEAK	SPE-TO	5	"
" " " SHELL AT FLAT OF BOTTOM FOR <sup>d</sup> OF ½ L. FOR <sup>e</sup>		6 ½ "	(TWO COMPLETE ROWS)
" " " FLOORS		"	"
" " SIDE FRAMES TO SHELL IN WAY OF 36° FRAME SPACING		"	"
" " " " PAINTING AREA & FORE & AFTER PEAKS		"	"
" " BOTTOM FRAMES TO SHELL APT OF ½ L. FORWARD & IN WAY OF 36° SPACING		6	"
" " 3 R BUTTS OF OUTSIDE PLATING & OF DECK STRANGER PLATES		3 ½ "	"
" " 4 R " " " "		4	"
" " SEAMS OF SHELL PLATING, DECK PLATING AS PER TABLE 40		"	"
" " BUTTS OF DECK PLATING		4	"
" " SEAMS OF BULK <sup>hd</sup> PLATING, WEATHER OR STRANGER ANGLES & BHD FRAME TO BHD		4 ½ "	"
" " FLAT KEEL ANGLES, VERTICAL ANGLES CONNECTING FLOORS TO C.G.			"
" " AND SHELL FLANGE OF W.T. BULK <sup>hd</sup> FRAME		5	"
" " FRAMES TO FLOORS APT OF ½ L. FORWARD, PLIVERGE FRAMES TO FLOORS & L			"
" " INNER BOTTOM PLATING, VERTICAL ANGLES TO FLOORS & SIDE GIRDERS,			"
" " IN BHD STIFFERS (EXCEPT PEAK BULK <sup>hd</sup> ) AND IN DECK PLATING TO BEAMS		7	"
" " CR. GIRDER TOP ANGLES (NON - WATER TIGHT)		7	"
" " " " (WATER TIGHT)		5	"

CENTRE GIRDER.  $4\frac{1}{2} \times 4 = .54$  FOR  $\frac{1}{2}$  L AMIDSHIPS  
 .46 AT ENDS. .62 BOILER SPACE. BUTTS WELDED  
 VERTICALS  $3\frac{1}{2} \times 3\frac{1}{2} \times .44$  SINGLE. .54 IN B.S.  
 "  $5 \times 5 \times .44$  SINGLE UNDER ENGINES & THRU  
 AND AT BOILER BEARERS.  
 TOP BARS  $3\frac{1}{2} \times 3\frac{1}{2} \times .48$  FOR  $\frac{1}{2}$  L TO .44 AT ENDS  
 .58 IN BOILER SPACE  
 BOTTOM BARS  $4 \times 4 \times .54$  FOR  $\frac{1}{2}$  L TO .50 AT ENDS

THE SCANTLINGS OF ANGLE & BULB ANGLE SECTIONS  
GIVEN ON THIS PLAN ARE N.B.S.

T.T. CO. STRAKE TO RULE  $54'' \times .52$  FOR  $\frac{1}{2}L$  ~~X~~  
TO .44 AT ENDS .52 IN ENG. SP. .58 IN B.S.  
FITTED  $7\frac{1}{2}'' \times .52$  FOR  $\frac{1}{2}L$  ~~X~~ TO .43 AT ENDS .52 E.S. .58 B.S.

**B** OUT 83" x .44 FOR 1/2 L W  
TO .40 AT ENDS .52 ES .58 BS  
+ .08 UNDER HATCHES



(1)

GRYFEVALE

Barham Yard N<sup>o</sup> 301-2-3-4

Midship Section

Embodying fabricated material.

37606

SUNDERLAND RPT. NO. 34144

Empire Mauritius

SUNDERLAND RPT. NO. 34207.

Empire Aden.

SUNDERLAND RPT. NO. 34323.

Empire Tobago.



CROWBURN HILL.

N/M KRISS



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MIDSHIP SECTION.

SEE  
SEPARATE  
PLAN.





(6)  
CH  
Bartram & Sons Ltd,  
as Ship No 301. P.F. ("C") Type.  
Aut. Sternframe.

Yard No 301-2-3-4

SUNDERLAND RPT. NO. 34144

Empire Mauritius

SUNDERLAND RPT. NO. 34207

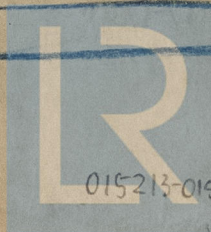
'Empire Aden'

SUNDERLAND RPT. NO. 34323.

Empire Tobago. ~~CH~~

'GRYFEVALE'

~~George Town Hill~~  
n. n. "GRYFEVALE" E



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015213-015223-0210







(7)  
Bartram & Sons Ltd

Ship No 301.P.F. ("") Type  
Rudder Plan

Yard No 301-2-3-4

SUNDERLAND RPT. NO. 34144

Empire Mauritius

SUNDERLAND RPT. NO. 34207

"Empire Oden"

SUNDERLAND RPT. NO. 34323

Empire Tobago.

N.N. "CROWBOROUGH HILL"

N.N. 'GRYFEVALE' X

MARKAB



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# P.F.(C) TYPE VESSEL. N°301.

## RUDDER PLAN.

12 JAN 1944

SCALE :- 3/4" = 1 FOOT.

### RUDDER.

TO LLOYD'S REQUIREMENTS.

LOAD DRAFT 26'-3", SHIPS SPEED 11 KNOTS.

AREA OF RUDDER (TO  $\frac{1}{2}$  OF PINTLES) = A = 146 SQ. FT.

C.G. OF AREA ABAFT  $\frac{1}{2}$  OF PINTLES = D = 3.86 FT.

A x D = 578.

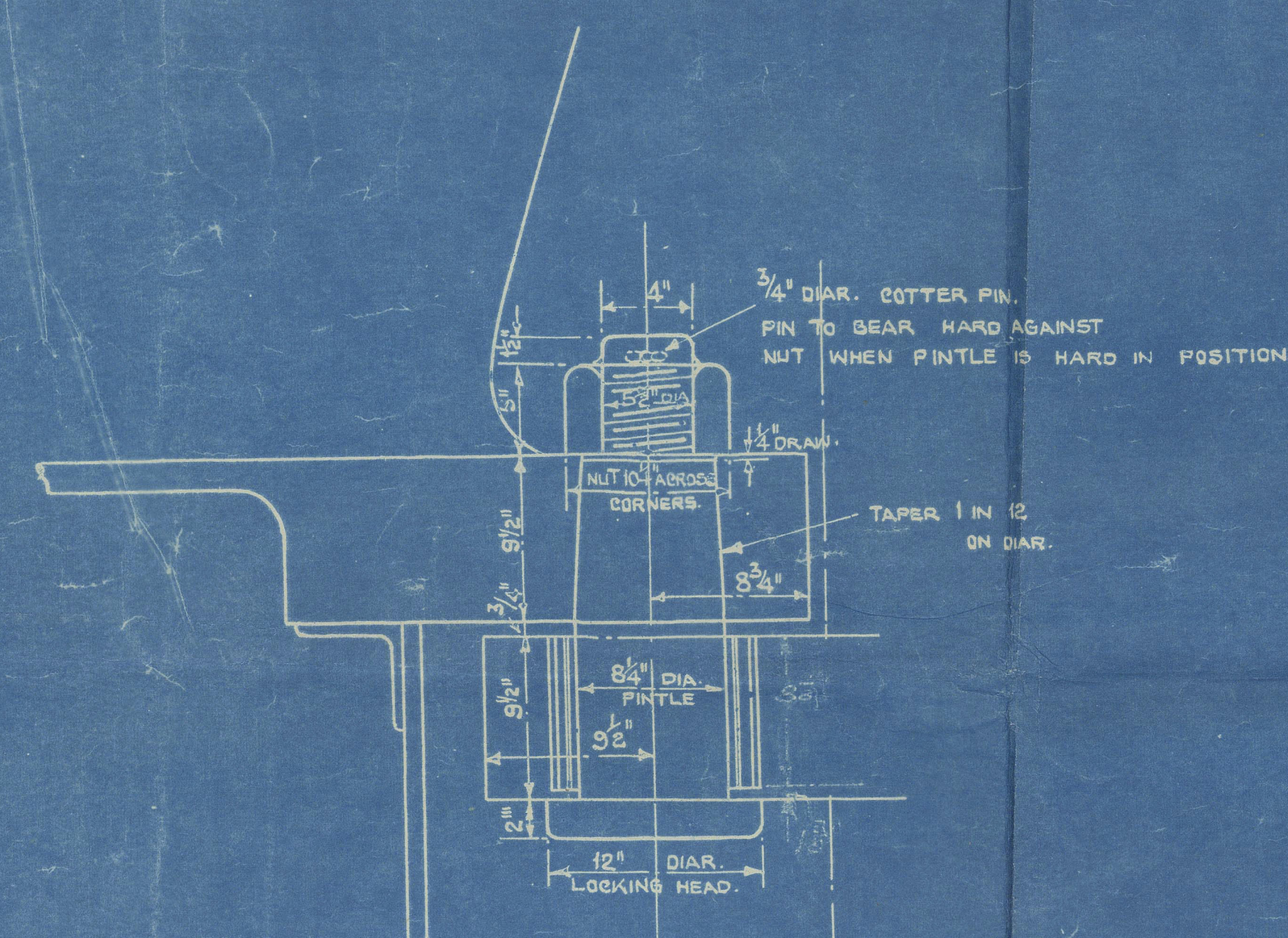
DIAM. OF RUDDER STOCK = 11" + 10% OF SECTIONAL AREA = 11 1/2".

RUDDER STOCK OF BEST FORGED STEEL.

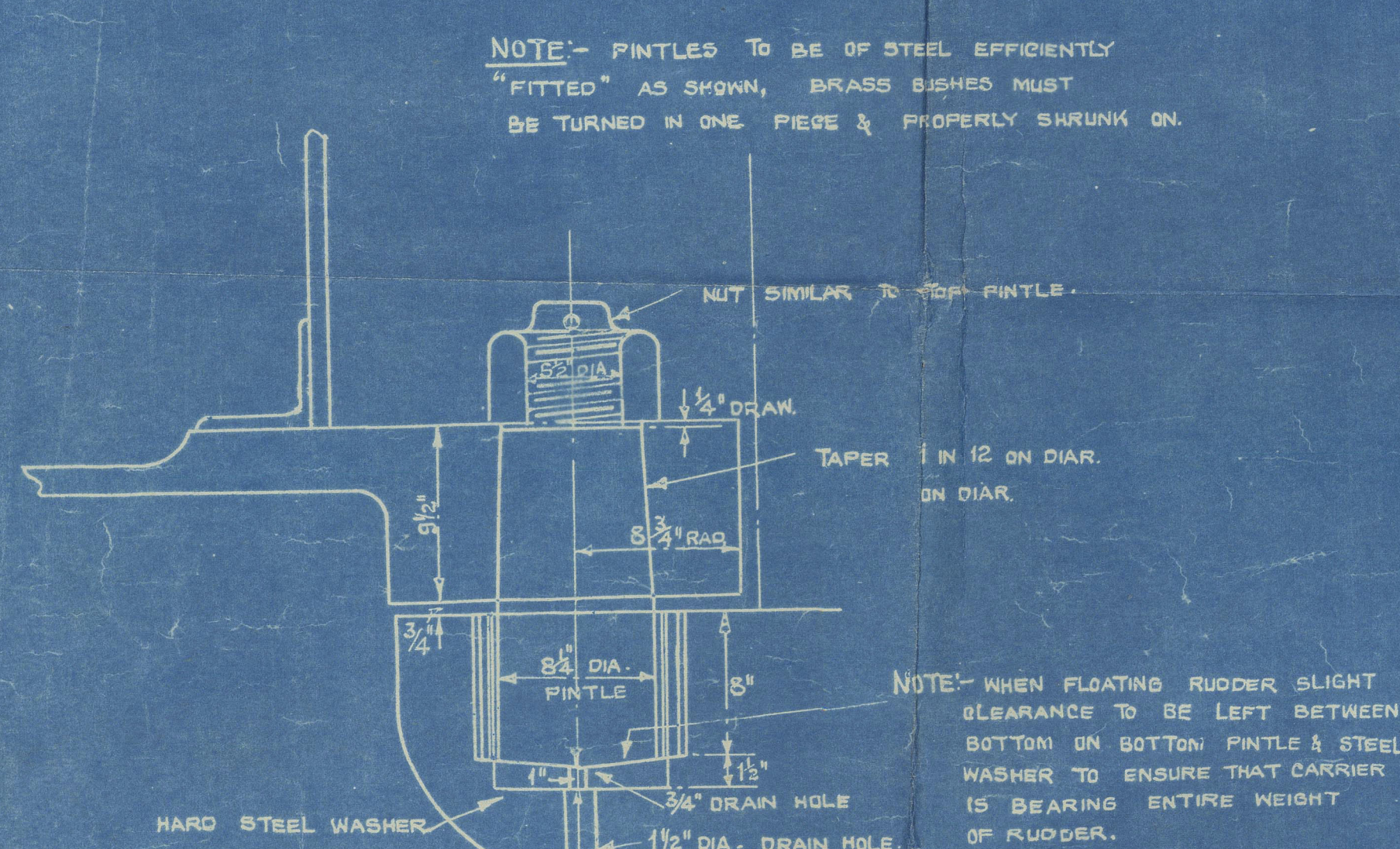
RUDDER CASTINGS OF STEEL.

RUDDER & RUDDER POST TO BE TESTED

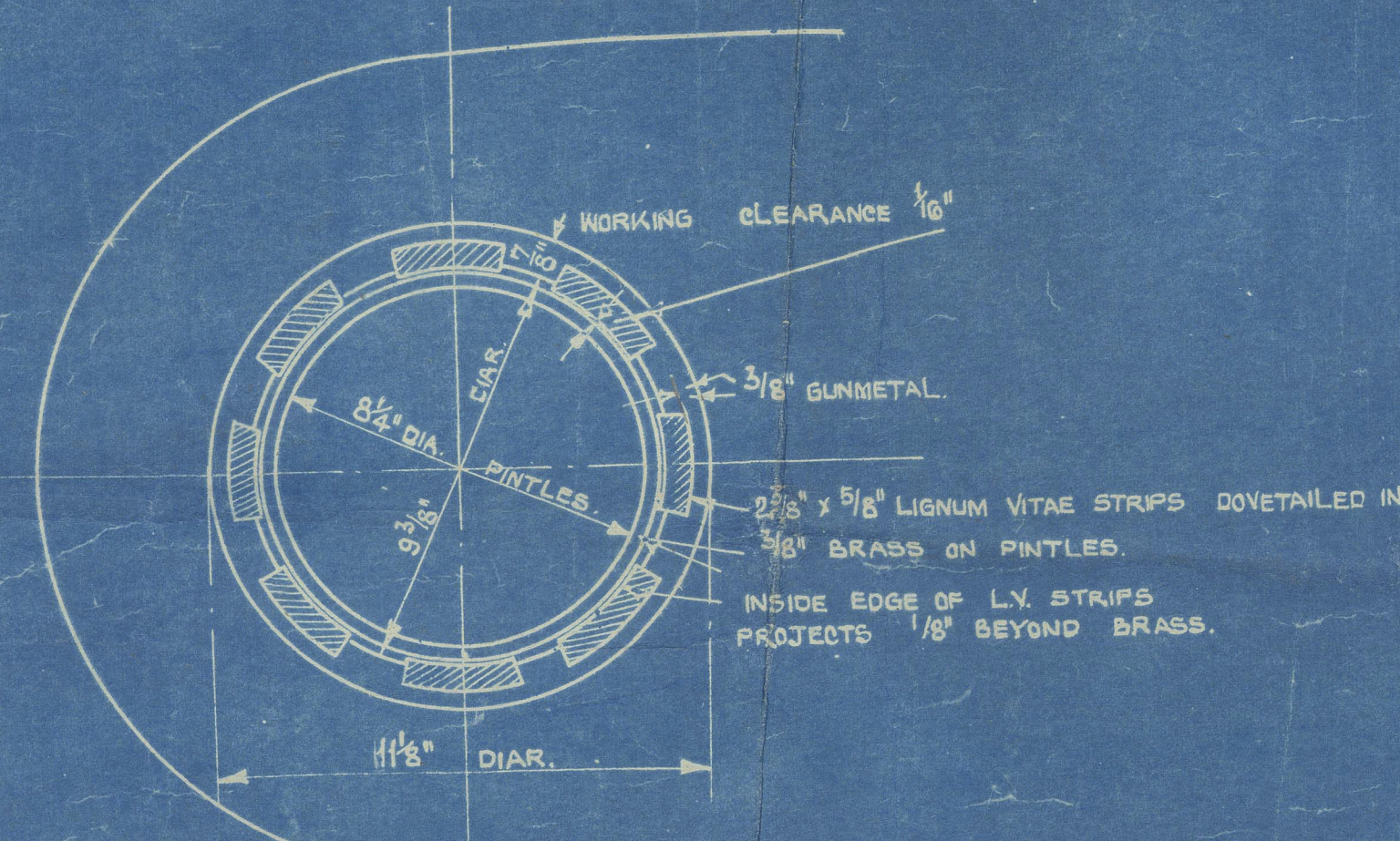
WITH BITUMINOUS SOLUTION.



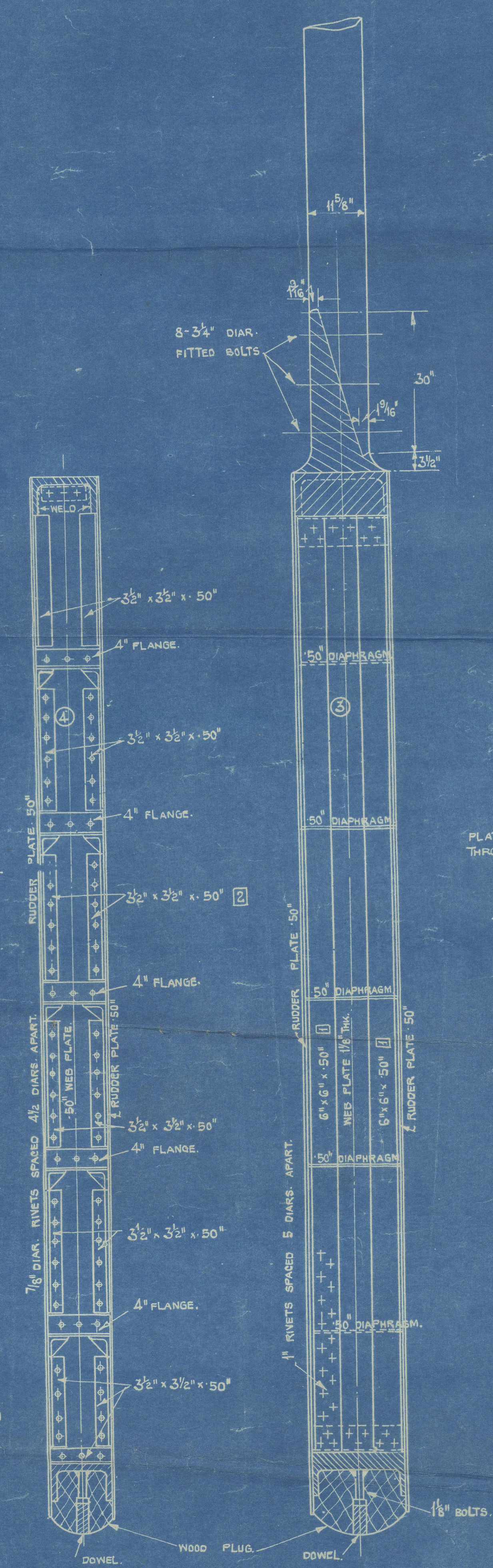
DETAIL OF TOP GUDGEON & PINTLE.  
SCALE :- 1/2" = 1 FOOT.



DETAIL OF BOTTOM GUDGEON & PINTLE.  
SCALE :- 1/2" = 1 FOOT.

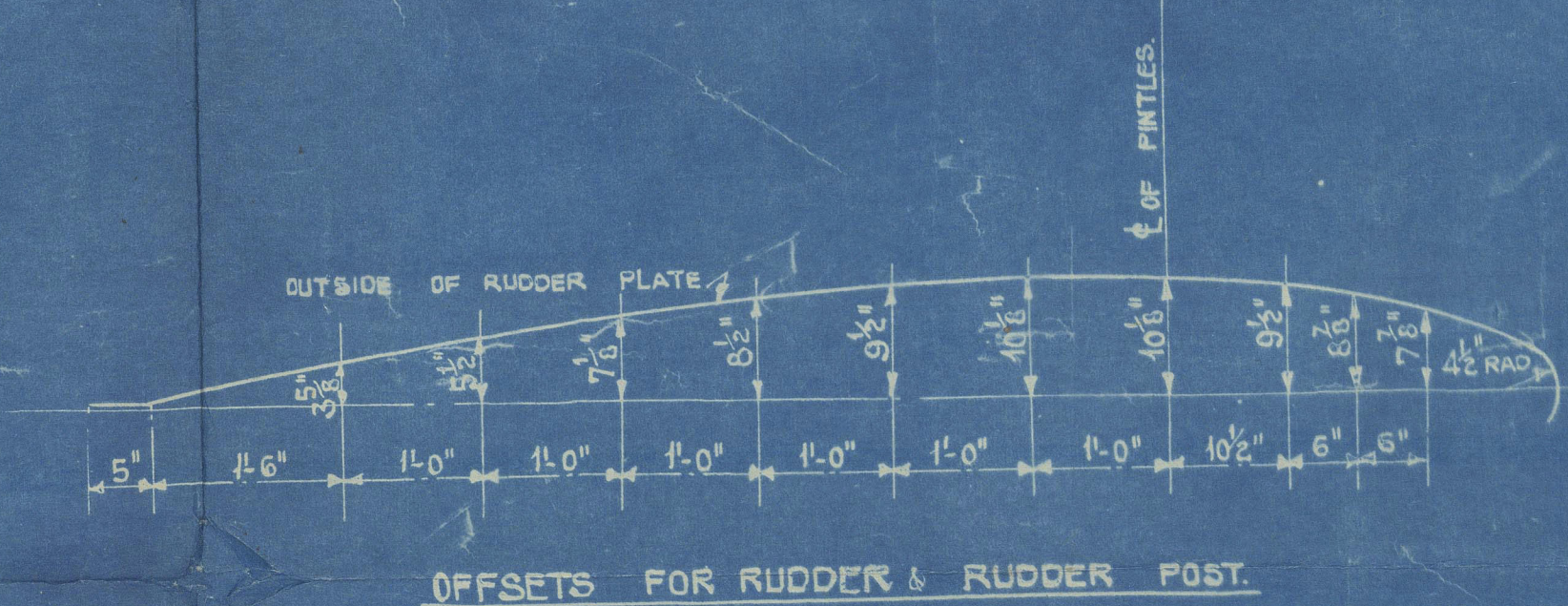


PLAN OF GUDGEONS.  
SCALE :- 3" = 1 FOOT.

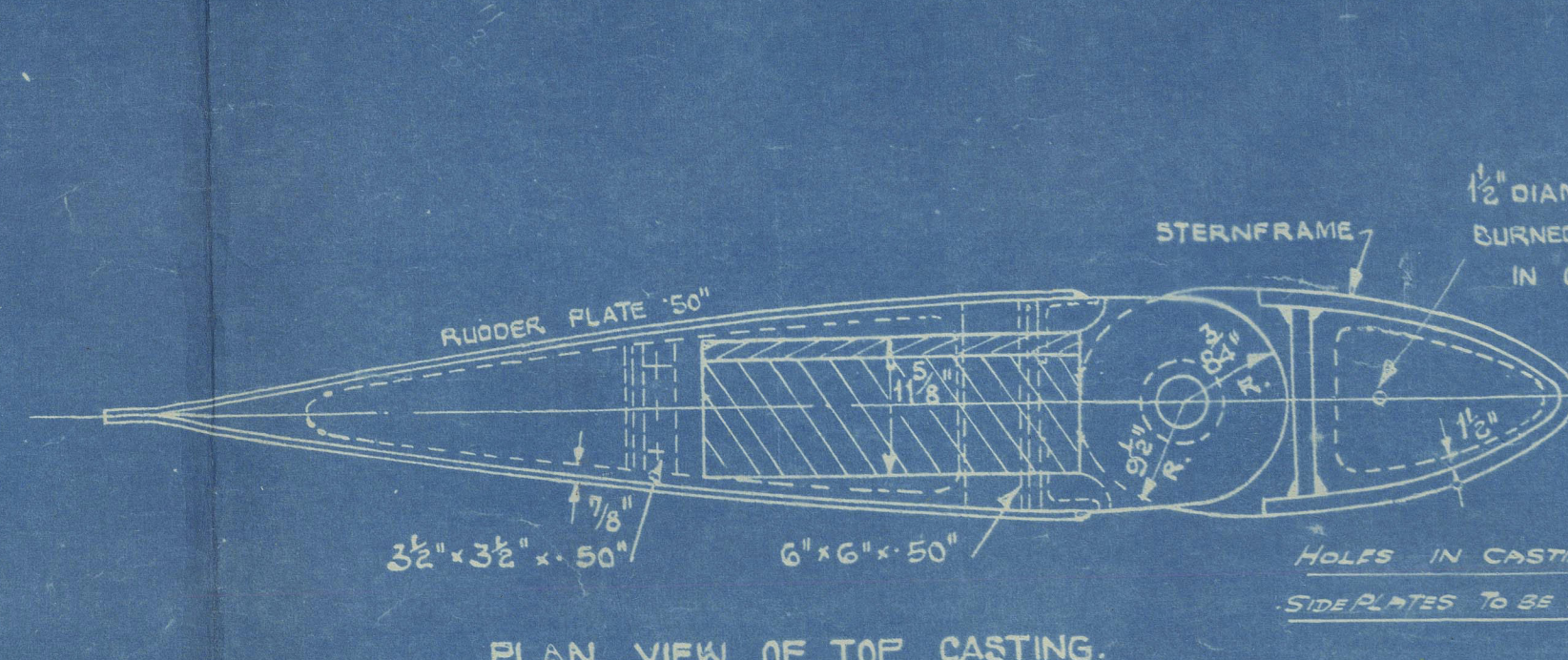


SECTION AT AFTER WEB.  
LOOKING AFT.

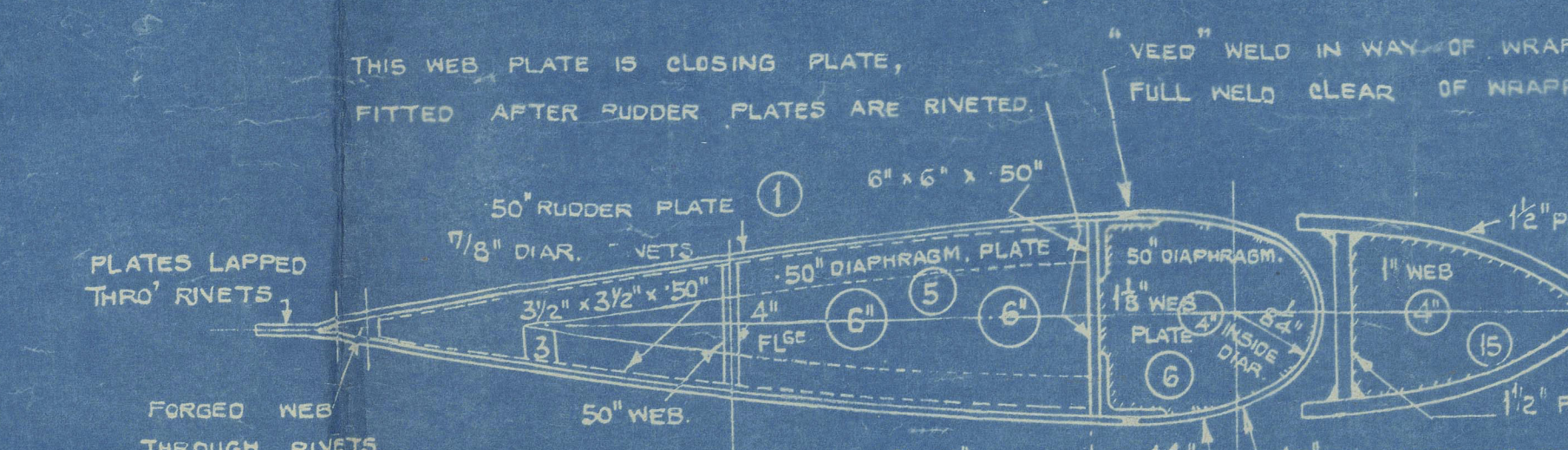
SECTION AT FORR WEB.  
LOOKING AFT.



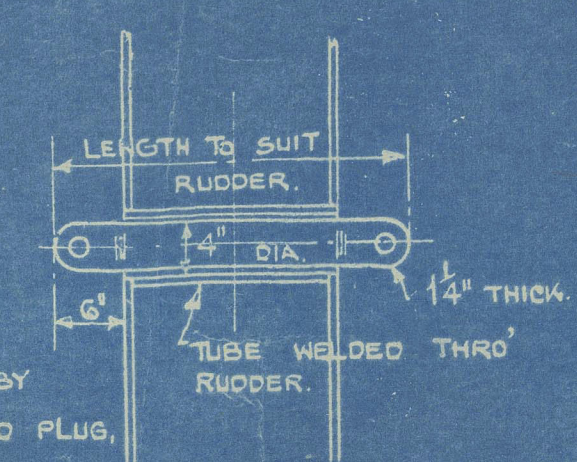
OFFSETS FOR RUDDER & RUDDER POST.



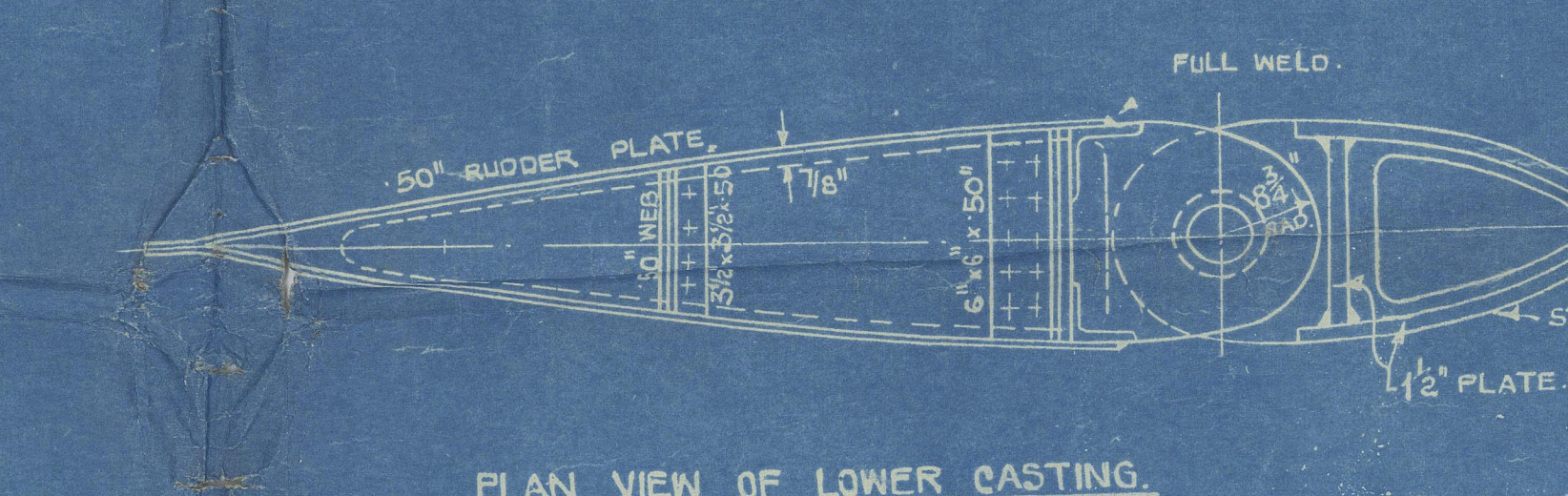
PLAN VIEW OF TOP CASTING.



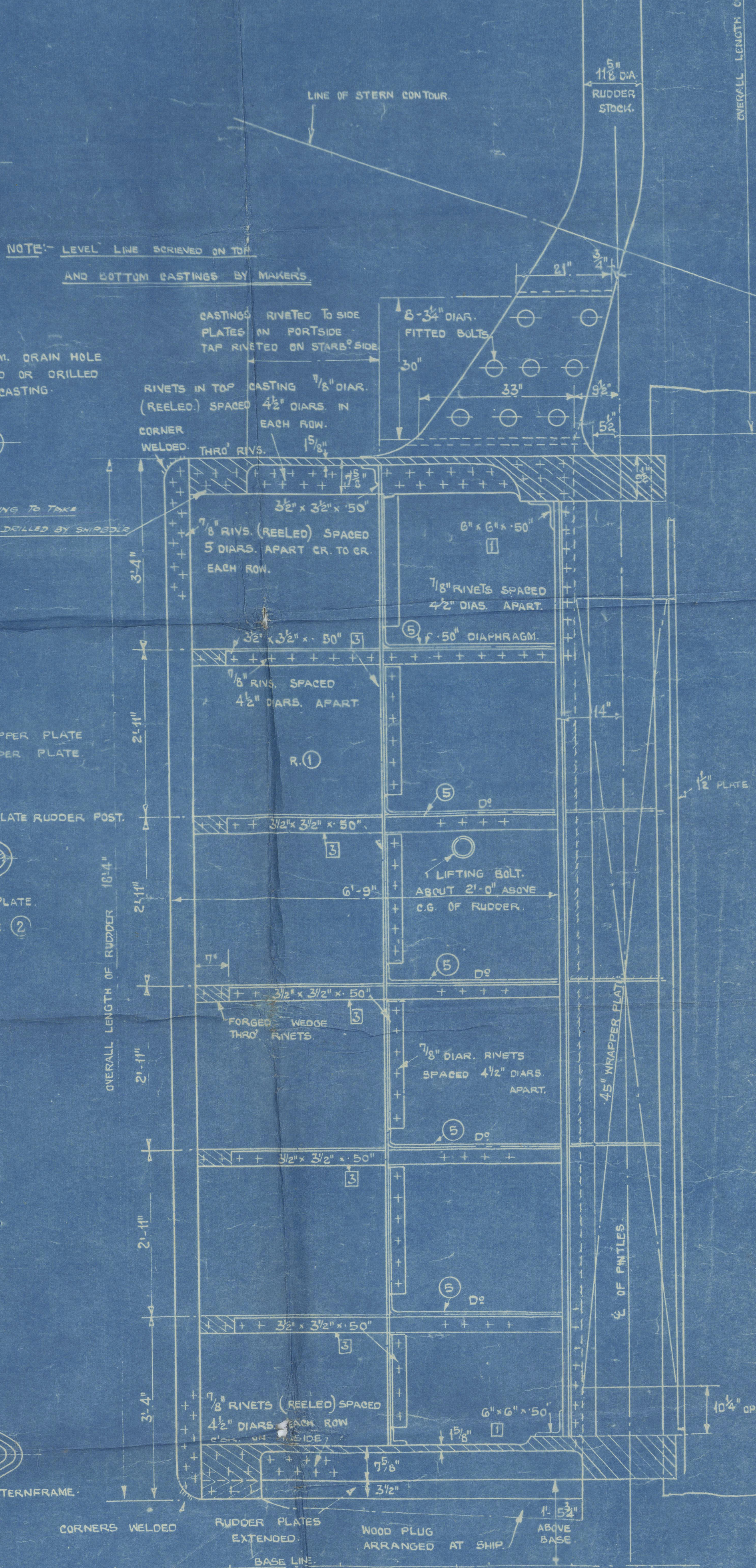
TYPICAL PLAN OF DIAPHRAGM



DETAIL OF RUDDER LIFTING BOLT.



PLAN VIEW OF LOWER CASTING.



PLAN NO. P.F.(C) 32  
DEPARTMENT ADMIRALTY DNB  
DATE 27 APRIL 43.



12 JAN 1944